40. The Court found that the FCC's interpretations of "necessary" and "impair" produce a more invasive approach to mandatory network unbundling than the Court believed Congress possibly could have intended:

> We cannot avoid the conclusion that, if Congress had wanted to give blanket access to incumbents' networks on a basis as unrestricted as the scheme the Commission has come up with, it would not have included § 251(d)(2) in the statute at all. It would simply have said (as the Commission in effect has) that whatever requested element can be provided must be provided.[60]

The Court traced that error in the FCC's statutory interpretation to the agency's conclusion that it would be necessary to unbundle, and would impair entry not to bundle, every network element that was technically feasible to unbundle:

> The FCC was content with its expansive methodology because of its misunderstanding of § 251(c)(3), which directs an incumbent to allow a requesting carrier access to its network elements "at any technically feasible point." The Commission interpreted this to "impose on an incumbent LEC *the duty to provide all network elements for which it is technically feasible to provide access*," and went on to "conclude that we have authority to establish regulations that are coextensive" with this duty.[61]

Justice Scalia observed that this interpretation was "undoubtedly wrong," as the Eighth Circuit had held.[62] Quoting the Eighth Circuit's decision, the Court emphasized that "[s]ection 251(c)(3) indicates '*where* unbundled access must occur, not *which* [network] elements must be unbundled.'"[63] The FCC, however, adopted a contrary interpretation in its *Local Competition First Report and Order*: "The Commission began with the premise that an incumbent was obliged to

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60. *Id.*

61. *Id.* at 736 (quoting *Local Competition First Report and Order*, 11 F.C.C. Rcd. at 15,640 ¶ 278 (emphasis added by the Court); *see also id.* (quoting *Local Competition First Report and Order*, 11 F.C.C. Rcd. at 15,643 ¶ 286 ("we conclude that the statute does not require us to interpret the 'impairment' standard in a way that would significantly diminish the obligation imposed by section 251(c)(3)").

62. *Id.*

turn over as much of its network as was 'technically feasible,' and viewed [section 251(d)(2)] as merely permitting it to soften that obligation by regulatory grace . . . ."[64]

41. The Court ruled that the FCC's "premise was wrong" and that "[s]ection 251(d)(2) does not authorize the Commission to create isolated exemptions from some underlying duty to make all network elements available."[65] Far from intending the FCC's discretionary dispensation of "regulatory grace," section 251(d)(2)

> requires the Commission to determine on a rational basis *which* network elements must be made available, taking into account the objectives of the Act and giving some substance to the "necessary" and "impair" requirements. The latter is not achieved by disregarding entirely the availability of elements outside the network, and by regarding *any* "increased cost or decreased service quality" as establishing a "necessity" and an "impair[ment]" of the ability to "provide . . . services."[66]

In short, the Court held that the FCC's interpretation of "necessary" and "impair" must reflect the procompetitive goals of the 1996 legislation, that the interpretation must embody an assessment of competitive substitution in the supply of network elements, and that the interpreta-tion must not trigger mandatory unbundling of network element on the basis of insignificant differences between the cost or service quality of the network elements used by the ILEC and the cost or service quality of the network elements that the ILEC supplies an entrant.

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63. *Id.* (quoting Iowa Utils. Bd. *v.* FCC, 120 F.3d at 810) (emphasis added by Justice Scalia).

64. *Id.* at 736 (citation omitted). As evidence of that erroneous premise, Justice Scalia quoted, *id.*, the following language from the *Local Competition First Report and Order*: "To give effect to both sections 251(c)(3) and 251(d)(2), we conclude that the proprietary and impairment standards in section 251(d)(2) grant us the authority to refrain from requiring incumbent LECs to provide all network elements for which it is technically feasible to provide access on an unbundled basis." 11 F.C.C. Rcd. at 15,641 ¶ 279.

65. 119 S. Ct. at 736.

66. *Id.* at 736 (emphasis in original). Justice Thomas concurred with this part of the Court's decision but wrote a separate opinion, joined by Chief Justice Rehnquist and Justice Breyer, that dissented from other parts of the Court's decision that are not pertinent to our discussion. *Id.* at 741 (Thomas, J., concurring in part and dissenting in part).

D. Justice Breyer's Concurring Opinion

42. Justice Breyer wrote a separate opinion in *Iowa Utilities Board* that concurred in the Court's holding on the "necessary" and "impair" standards but dissented from the Court's holding concerning the FCC's jurisdiction to promulgate pricing rules that were binding on the states.[67] Unlike Justice Scalia, whose opinion for the Court confined itself to linguistic interpretation of statutory text, Justice Breyer began with the premise that the "statute's history and purpose can illuminate its language."[68] Accordingly, Justice Breyer read the "necessary" and "impair" requirements not only "in light of history, purpose, and precedent,"[69] but also in light of scholarly research on the law and economics of regulation and antitrust jurisprudence.[70]

1. Justice Breyer on the History, Purpose, and Precedent of the Telecommunications Act

43. Unlike Justice Scalia, Justice Breyer presented the litigation over unbundling and UNE pricing as the current act of a long drama, commencing with the divestiture of AT&T. Thereafter, the federal government had used the prospect of its lifting the regulatory quarantine against entry into interLATA markets by the regional Bell operating companies (RBOCs) as an inducement to their taking the practical steps to open their local exchange markets to competitive entry—by, among other possible firms, the interexchange carriers

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67. 119 S. Ct. at 746-54 (Breyer, J., concurring in part and dissenting in part).

68. *Id.* at 746. For historical analysis, Justice Breyer relied upon Justice Thomas's dissenting opinion, *id.* at 740-46, in which Justice Breyer and Chief Justice Rehnquist joined, concurring in part and dissenting in part.

69. *Id.* at 746 (Breyer, J., concurring in part and dissenting in part).

70. Justice Breyer, of course, has made his own contributions to that scholarly literature. *See* STEPHEN G.

(IXCs).[71] Justice Breyer acknowledged that the government's use of a barrier to entry in one market as a lever to promote entry into another market created costs in terms of diminished interLATA competition that must be balanced against the perceived benefits of stimulating competition in local telephony. Through the Telecommunications Act, he observed, Congress codified, in section 271, its judgment concerning the proper tradeoff between competitive benefits and costs.[72]

44. To advance toward competition in local telephony, Justice Breyer observed, the 1996 legislation poses, but "does not purport to answer," the empirical question, "To what extent is local competition possible without wasteful duplication of facilities?"[73] The Telecommunications Act "creates a set of legal rules," including unbundling rules, "which, through interaction with the marketplace, aims to produce sensible answers."[74] Justice Breyer summarized Congress's logic in enacting the local competition and long-distance provisions of the Telecommunications Act as follows:

> [O]ne can understand the basic logic of "unbundling" by imagining that Congress required a sole incumbent railroad providing service between City A and City B to share certain basic facilities, say, bridges, rights-of-way, or tracks, in order to avoid wasteful duplication of those hard-to-duplicate resources while facilitating competition in the *remaining* aspects of A-to-B railroad service. In-

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BREYER, REGULATION AND ITS REFORM (Harvard University Press 1982); Breyer, *supra* note 12.

71. *Id.* at 746-47 (citing, among other secondary sources, THOMAS G. KRATTENMAKER, TELECOMMUNICATIONS LAW AND POLICY 411-12 (Carolina Academic Press 2d ed. 1998); KAHN, *supra* note 7, at 37-38 & n.53; PAUL W. MACAVOY, THE FAILURE OF ANTITRUST AND REGULATION TO ESTABLISH COMPETITION IN LONG-DISTANCE TELEPHONE SERVICES 171-77, 179-83 (MIT Press & AEI Press 1996); PETER W. HUBER, MICHAEL K. KELLOGG & JOHN THORNE, THE GEODESIC NETWORK II: 1993 REPORT ON COMPETITION IN THE TELEPHONE INDUSTRY at 2.3-2.5 (1992); Thomas G. Krattenmaker, *The Telecommunications Act of 1996*, 49 FED. COMM. L.J. 1, 15-16 (1996); Glen O. Robinson, *The* Titanic *Remembered: AT&T and the Changing World of Telecommunications*, 5 YALE J. ON REG. 517, 537 (1988)).

72. *Id.* at 747.

73. *Id.*

74. *Id.* (citing 47 U.S.C. §§ 251(c)(2), 251(c)(3), 251(c)(4), 253(a)).

> deed, one might characterize the Act's basic purpose as seeking to bring about, without inordinate waste, greater local service competition both as an end in local markets and as a means towards more competition, and fair competition, in long-distance markets.[75]

Justice Breyer believed that "[t]hose purposes neither require nor suggest reading the Act's language to change radically the scope of local regulators' traditional rate-setting powers."[76] His basis for that view has equal applicability to the "necessary" and "impair" standards of section 251(d)(2), an issue on which Justice Breyer concurred with seven other Justices:

> The introduction of competition into a particular locality does not diminish the importance of place-specific factors, such as local history, geography, demands, and costs. And local regulators are likely more familiar than are national regulators, for example, with a particular utility's physical plant, its cost structure, the pattern of local demand, the history of local investment, and the need for recovery of undepreciated fixed costs. Moreover, local regulators have experience setting rates that recover both the immediate, smaller, added costs that demand for additional service imposes upon a local system and also a proper share of the often huge fixed costs (of local loops, say, or switches) and overhead needed to provide the dial tone itself. Indeed, local regulators would seem as likely, if not more likely, than national regulators to know whether, when, or the extent to which, particular local charges or systems of charges will lead new entrants to abandon efforts to use a local incumbent's elements, turning instead to alternative technologies. And local regulators would seem as likely as national regulators to know whether or when use of such alternative technologies in the local circumstances will prove more beneficial than wasteful. It is the local communities, and, hence, local regulators, that will directly confront the problems and enjoy the benefits associated with local efforts to integrate new and old communications resources and communications firms.[77]

As we shall explain in Part V, this insight concerning the unique competence of state regulators in evaluating the competitive and regulatory aspects of local telecommunications markets has special relevance to the FCC's 1999 proposal in the *Second Further Proposed*

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75. *Id.* at 748 (emphasis in original).

76. *Id.*

77. *Id.* Justice O'Connor did not participate in the case. *Id.* at 721.

Notice of Rulemaking to preempt state participation in the interpretation and administration of section 251(d)(2) by announcing, on a nationwide basis, that certain unbundled network elements are deemed to meet the "necessary" and "impair" requirements.

2. Justice Breyer on the FCC's Pricing Rules for Unbundled Network Elements

45. Much of Justice Breyer's separate opinion addressed his disagreement with the majority over whether the Telecommunications Act gave the FCC the authority to preempt state rate-setting for unbundled network elements. Although most of that analysis is not directly relevant to interpreting the "necessary" and "impair" requirements, some portions unquestionably are. In particular, Justice Breyer emphasized that, "when faced with ambiguity" in a regulatory statute that envisions federal and state cooperation, the Court is "to interpret statutes . . . on the assumption that Congress intended to preserve local authority."[78] That insight illuminates as well the question of whether the FCC's interpretation of section 251(d)(2) will preserve a role for the state public utilities commissions (as finders of fact, for example) in determining whether a particular network element in a particular geographic market is subject to mandatory unbundling under the "necessary" and "impair" requirements.

46. Justice Breyer observed that, far from being "general," the "dozens of pages of text that set . . . forth" the FCC's pricing rules for unbundled network elements were "highly specific and highly detailed."[79] Their effect was to deny any discretion to state regulators:

78. *Id.* at 749-50 (citing Cipollone v. Liggett Group, Inc., 505 U.S. 504, 518 (1992); Rice v. Santa Fe Elevator Corp., 331 U.S. 218, 230 (1947)).

79. *Id.* at 751 (citing *Local Competition First Report and Order*, 11 F.C.C. Rcd. at 15,844-62 ¶¶ 672-715).

> [The FCC's pricing rules] deprive state commissions of methodological leeway. Their rate-setting instructions grant a state commission little or no freedom to choose among reasonable rate-determining methods according to the State's policy-related judgments, assessing local economic circumstance or community need. I grant the fact that the rules leave it to the state commissions to fix the actual rate, but that is rather like giving a restaurant chef the authority to choose a menu while restricting him to one dish, an omelet, and to one single favorite recipe.[80]

Furthermore, Justice Breyer noted, the Telecommunications Act did not compel the pricing rule that the FCC imposed on the states.[81] He regarded the FCC's vision of competition as misguided: "The FCC does argue that the Act's purpose, competition, favors its system."[82] But Justice Breyer disagreed with the FCC's understanding of "competition." "The competition that the Act seeks is a process, not an end result; and a regulatory system that imposes through administrative mandate a set of prices that tries to mimic those that competition would have set does not thereby become any the less a regulatory process, nor any the more a competitive one."[83] As we shall explain in Part II, this misconception of competition directly affects the FCC's interpretation of the "necessary" and "impair" standards as well, for the *Second Further Notice of Proposed Rulemaking* subordinates consumer welfare to competitor welfare and then regards the latter as the indicator of whether "competition" exists.

47. The *Second Further Notice of Proposed Rulemaking* invites the question of whether the FCC would, by announcing nationwide unbundling rules, similarly attempt to deny state regulators all discretion with respect to identifying whether particular elements are

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80. *Id.*
81. *Id.* ("Nor can the FCC successfully argue that the Act requires the particular rate-setting system that its regulations contain.").
82. *Id.*
83. *Id.*

subject to mandatory unbundling at TELRIC prices. In the context of UNE pricing, Justice Breyer intimated that the FCC's strategy in preempting the states from developing their own pricing rules was to foreclose other reasonable interpretations of the statute without having to supply an intellectually respectable justification for that exclusion: "Most importantly, the FCC's rules embody not an effort to circumscribe the realm of the reasonable, but rather a policy-oriented effort to choose among several different systems, including systems based upon actual costs or price caps, which other systems the FCC's rules prohibit."[84] Those alternative pricing rules, prohibited by the FCC, "illustrate . . . how easily a regulator weighing certain policy considerations (for example administrative considerations) differently might have chosen a different set of reasonable rules."[85] One could imagine state regulators similarly adopting conclusions about "necessity" and "impairment" that differ reasonably from the FCC's conclusions.

3. Justice Breyer on the "Necessary" and "Impair" Requirements for Mandatory Unbundling of Network Elements

48. Justice Breyer concurred in the Court's holding with respect to the FCC's interpretation of the "necessary" and "impair" requirements of section 251(d)(2). In writing

84. *Id.*

85. *Id.* at 751-52. With respect to the "the FCC's decision to prohibit use" of the efficient component-pricing rule (ECPR), *id.* at 752, Justice Breyer noted: "The FCC rejected that [ECPR] system, but in doing so it did not claim, nor did its reasoning support the claim, that the use of such a system would be arbitrary or unreasonable." *Id.* (citing Sidak & Spulber, *The Tragedy of the Telecommons*, *supra* note 5, at 1095-98). Of "the FCC's decision to forbid the use" of Ramsey pricing, *id.*, Justice Breyer wrote: "Many experts strongly prefer the use of such a system [and some argue] that the FCC's prohibition of Ramsey pricing will 'minimize rather than maximize consumer welfare.' The FCC disfavors Ramsey pricing, but it does not explain why a contrary judgment would conflict with the statute or otherwise be arbitrary or unreasonable." *Id.* (citing 1 ALFRED E. KAHN, THE ECONOMICS OF REGULATION: PRINCIPLES AND INSTITUTIONS 137-41 (MIT Press rev. ed. 1988), and quoting Sidak & Spulber, *The Tragedy of the Telecommons*, *supra* note 5, at 1109).

separately on this part of the Court's decision, he employed economic analysis that complemented the linguistic analysis of Justice Scalia's majority opinion.

49. Justice Breyer began by noting the Telecommunications Act expresses the unbundling obligations of ILECs "in general terms, reflecting congressional uncertainty about the extent to which compelled use of an incumbent's facilities will prove necessary to avoid waste."[86] He then anticipated the question, which we address in Part III, that goes to the heart of the *Second Further Notice of Proposed Rulemaking*: "Will wireless technology or cable television lines, for example, permit the efficient provision of local telephone service without the use of existing telephone lines that now run house to house?"[87] Such substitution at the end-user level has the potential, over the near term in some geographic markets, to render mandatory unbundling of even residential local loops unnecessary, inappropriate, and thus unlawful.

50. Justice Breyer found the "reasonably clear" objective of section 251(d)(2) to be "to facilitate the introduction of competition where practical, *i.e.*, without inordinate waste."[88] That objective, he reasoned, required section 251(d)(2) to function like the essential facilities doctrine in antitrust law:

> [A]lthough the provision describing which elements must be unbundled does not explicitly refer to the analogous "essential facilities" doctrine (an antitrust doctrine that this Court has never adopted), the Act, in my view, does impose related limits upon the FCC's power to compel unbundling. In particular, I believe that, given the Act's basic purpose, it requires a convincing explanation of why facilities should be shared (or "unbundled") where a new entrant could

86. *Id.* at 753.
87. *Id.*
88. *Id.*

> compete effectively without the facility, or where practical alternatives to that facility are available.[89]

Justice Breyer noted that Justice Scalia reached this insight by textual analysis.[90] The great utility of Justice Breyer's concurrence on the unbundling rules is that he went beyond the majority's textual analysis to suggest that the kind of consumer welfare analysis that a court routinely conducts in an antitrust case also would yield the same answer: Section 251(d)(2) must be implicitly limited by a principle that resembles the essential facilities doctrine.

51. Justice Breyer emphasized that, in multiple respects, unbundling is not costless, either to private firms, consumers, or regulators:

> The fact that compulsory sharing can have significant administrative and social costs inconsistent with the Act's purposes suggests [that a limiting principle implicitly exists.] Even the simplest kind of compelled sharing, say, requiring a railroad to share bridges, tunnels, or track, means that someone must oversee the terms and conditions of that sharing. Moreover, a sharing requirement may diminish the original owner's incentive to keep up or to improve the property by depriving the owner of the fruits of value-creating investment, research, or labor.[91]

Furthermore, Justice Breyer warned that the complexity and cost of mandatory unbundling multiply as the network elements in question become more technologically sophisticated and as product or process innovation becomes a more significant dimension over which firms compete in the provision of end services:

> And as one moves beyond the sharing of readily separable and administrable physical facilities, say, to the sharing of research facilities, firm management, or technical capacities, these problems can become more severe. One would not ordinarily believe it practical, for example, to require a railroad to share its lo-

89. *Id.* (citing Phillip E. Areeda, *Essential Facilities: An Epithet in Need of Limiting Principles*, 58 ANTITRUST L.J. 841, 852-53 (1989)).
90. *Id.* ("the Act's language itself suggests some such limits").
91. *Id.*

> comotives, fuel, or workforce. Nor can one guarantee that firms will undertake the investment necessary to produce complex technological innovations knowing that any competitive advantage deriving from those innovations will be dissipated by the sharing requirement. The more complex the facilities, the more central their relation to the firm's managerial responsibilities, the more extensive the sharing demanded, the more likely these costs will become serious. And the more serious they become, the more likely they will offset any economic or competitive gain that a sharing requirement might otherwise provide. The greater the administrative burden, for example, the more the need for complex proceedings, the very existence of which means delay, which in turn can impede the entry into long-distance markets that the Act foresees.[92]

We examine these costs of mandatory unbundling in detail in Part II.

52. To Justice Breyer, the need for a limiting principle found further support in a proper understanding of the kinds of competition that would and would not emerge from mandatory unbundling:

> Nor are any added costs imposed by more extensive unbundling requirements necessarily offset by the added potential for competition. Increased sharing by itself does not automatically mean increased competition. It is in the *un*shared, not in the shared, portions of the enterprise that meaningful competition would likely emerge. Rules that force firms to share *every* resource or element of a business would create, not competition, but pervasive regulation, for the regulators, not the marketplace, would set the relevant terms.[93]

The interpretation of section 251(d)(2) therefore requires a "balance" of the expected benefits and costs that the interpretation will engender.[94] "Regulatory rules that go too far, expanding the definition of what must be shared beyond that which is essential to that which merely proves advantageous to a single competitor, risk costs that, in terms of the Act's objectives,

92. *Id.* at 753-54 (citing 1 HAROLD DEMSETZ, OWNERSHIP, CONTROL, AND THE FIRM: THE ORGANIZATION OF ECONOMIC ACTIVITY 207 (1988)).

93. *Id.* at 754 (emphasis in original).

94. *Id.* Justice Breyer's conclusion is consistent with his broader view that regulation should be subjected to rigorous cost-benefit analysis. *See generally* STEPHEN G. BREYER, BREAKING THE VICIOUS CYCLE: TOWARD EFFECTIVE RISK REGULATION (Harvard University Press 1995).

may make the game not worth the candle."[95] Why, asked Justice Breyer, if (as the FCC seemed to believe) Congress had intended through its enactment of the Telecommunications Act of 1996 that "an incumbent should be forced to share virtually every aspect of its business, ... would Congress have seen a need for a separate wholesale sales requirement (since the 'unbundling' requirement would have led to a similar result)? Indeed, would Congress have so emphasized the importance of competition?"[96] Justice Breyer concluded that the FCC's vision of the optimal level of unbundling—"the more the incumbent unbundles, the better"[97]—would create nothing more than a Potemkin village of competition: "A totally unbundled world—a world in which competitors share every part of an incumbent's existing system, including, say, billing, advertising, sales staff, and work force (and in which regulators set all unbundling charges)—is a world in which competitors would have little, if anything, to compete about."[98]

E. Justice Souter's Dissent

53. In a separate opinion in *Iowa Utilities Board*, Justice Souter concurred in the Court's holding that the FCC had jurisdiction to set UNE pricing rules that bound the states, but he dissented from the Court's holding that the FCC unreasonably interpreted the "necessary" and "impair" requirements of section 251(d)(2).[99] Justice Souter's dissent is significant because, of the four opinions by the Justices in *Iowa Utilities Board*, his most closely resembles the reasoning contained three months later in the FCC's *Second Further Notice of Proposed*

95. 119 S. Ct. at 754 (Breyer, J. concurring in part and dissenting in part).
96. *Id.*
97. *Id.*
98. *Id.*

Rulemaking. Justice Souter's interpretation of "necessary" and "impair" was the polar opposite of Justice Breyer's, for the former would read the public interest standard of the Telecommunications Act of 1996 to subordinate the welfare of consumers to the welfare of individual competitors.

54. Justice Souter considered that, "[u]nder *Chevron*, the only question before us is whether the Commission's interpretation, obviously favorable to potential competitors, falls outside the bounds of reasonableness."[100] He conceded that Rule 319 would "probably allow a competitor to obtain access to any network element that it wants" by presenting at most "a weak economic justification."[101] As a matter of statutory interpretation, Justice Souter considered "necessary" and "impair" to be ambiguous words that *Chevron* entitled the FCC to define in any reasonable manner, including what he described as the "weak . . . but unquestionably still ordinary uses of the words" that he illustrated with this ladder-and-light-bulb example, commented upon by Justice Scalia.[102] Justice Souter did not recognize that what he regarded as the FCC's "reasonable" statutory interpretation would redefine the public interest standard as a competitor-welfare standard:

> A service is surely "necessary" to my business in an ordinary, weak sense of necessity when that service would allow me to realize more profits, and a business can be said to be "impaired" in delivery of services in an ordinary, weak sense of

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99. 119 S. Ct. at 739 (Souter, J., concurring in part and dissenting in part).

100. *Id.*

101. *Id.*

102. "If I want to replace a light bulb, I would be within an ordinary and fair meaning of the word 'necessary' to say that a stepladder is 'necessary' to install the bulb, even though I could stand instead on a chair, a milk can, or eight volumes of Gibbon. I could just as easily say that the want of a ladder would 'impair' my ability to install the bulb under the same circumstances." *Id.*

> impairment when something stops the business from getting the profit it wants for those services.[103]

Unlike Justice Breyer, Justice Souter could perceive no social costs that would offset the perceived social benefits of greater degrees of unbundling. Justice Souter did not recognize that his interpretation of section 251(d)(2) would place the unbundling rules at cross-purposes with the rest of the Telecommunications Act, as well as with the antitrust laws. Justice Souter's reasoning was rejected by every other member of the Court participating in the *Iowa Utilities Board* decision.

II. Why Limiting Principles Are Necessary

55. In this Part, we will use economic analysis to articulate why the FCC must give interpretations to the "necessary" and "impair" standards that are rationally related to the purposes of the Telecommunications Act of 1996. Foremost among those limiting principles is the proposition that the FCC's unbundling rules should regard the public interest as primarily determined by consumer welfare, which in turn is determined by competition rather than competitor welfare. Whether it is "necessary" for the FCC to mandate, at TELRIC prices, the unbundling of a particular proprietary network element in a particular location at a particular time should depend on whether such unbundling is necessary to permit the competitive supply of telecommunications services to end users. Similarly, the correct meaning of "impair" for purposes of section 251(d)(2) is whether the ILEC's failure to unbundle, at TELRIC prices, a particular nonproprietary network element in a particular location at a particular time would

103. *Id.* at 740.

produce an equilibrium supply of telecommunications services that was, relative to the competitive equilibrium, significantly inferior for consumers. Here, "inferior" can mean not only higher prices, but also lower quality services or less innovation in new telecommunications services, the consumer welfare losses from which have been shown empirically to be enormous.[104]

A. Unbundling Rules Should Emphasize Consumer Welfare Rather than Competitor Welfare

56. The "necessary" and "impair" standards should be applied to overall competition, not to the economic interests of individual competitors, large or small. In its *Local Competition First Report and Order,* the Commission failed to make that distinction, which is well recognized in antitrust law, as we explain below. Unfortunately, the FCC's 1999 *Second Further Notice of Proposed Rulemaking* seems inclined to repeat that error.

1. The Goal of the Telecommunications Act Is to Improve Consumer Welfare

57. Consumers benefit from competition because it leads to greater innovation and lower prices. Thus, the public interest is consistent with increased competition and innovation. The public-interest standard, however, has not always received so precise a definition in telecommunications regulation. Three years before the passage of the Telecommunications Act of 1996, Professor William J. Baumol and one of the present authors wrote:

> [W]e will use the phrase "the public interest" more precisely and restrictively than do the Communications Act, the FCC, and the state public utility commissions. It will connote economic efficiency, or the maximization of the general

104. *See* Hausman, *Valuing the Effect of Regulation on New Services in Telecommunications*, *supra* note 11.

> welfare of consumers and producers—that is, the maximization of the sum of consumers' surplus and producers' surplus. Often this criterion is referred to in the abbreviated form "consumer welfare maximization."
>
> The primacy that economists ascribe to economic efficiency and consumer welfare maximization has a related benefit: it harmonizes economic regulation and antitrust law. For in the latter, the Supreme Court has contributed a muscular jurisprudence asserting that the first goal of the Sherman Act and other federal antitrust statutes is to be a "consumer welfare prescription." This harmony between regulation and antitrust has three important implications. First, the same basic tools of microeconomic analysis can be employed in one as in the other. There can be little disagreement that the economic sophistication of antitrust law has enriched the regulatory analysis of natural monopoly. Second, changes in technology or other circumstances that permit natural monopoly to give way to competition impart continuity to the relationship between economic regulation and antitrust. Third, many of the thorniest problems in antitrust law—such as judicial enforcement of injunctive remedies under the [Modification of Final Judgment] or the essential facilities doctrine—are fundamentally regulatory in nature, involving issues such as entry or the pricing of intermediate goods sold to competitors. Thus, the economic scholarship on regulation can in many instances enrich antitrust jurisprudence.[105]

In 1996, Congress removed any remaining ambiguity about the goal of federal telecommunications law when, as noted earlier, it emphasized in the Telecommunications Act that the improvement of consumer welfare was the new legislation's overarching purpose.

2. The Supreme Court Has Instructed the Commission to Pursue a Consumer-Welfare Standard

58. A standard that looks to the effect on competition, rather than the interests of a given CLEC, comports with the Supreme Court's command that the Commission must take into account the availability of substitutes for ILEC network elements outside the ILEC's network. If substitutes outside the ILEC's network are available, that availability occurs

105. BAUMOL & SIDAK, *supra* note 11, at 26–27 (citing National Collegiate Athletic Ass'n. *v.* Board of Regents of Univ. of Okla., 468 U.S. 85, 107 (1984); Reiter *v.* Sonotone Corp., 442 U.S. 330, 343 (1979); BORK, *supra* note 12, at 66; Breyer, *supra* note 12).

because some firms have made the rational economic decision that they can efficiently provide services that employ those elements.

59. Two conclusions necessarily follow. First, the element as provided by the ILEC cannot be essential for competition because competition is already occurring *without* ILEC provision. Thus, the network element, unbundled by government decree at TELRIC prices, cannot be labeled an essential facility, or "necessary" to competition, or an element for which the decision not to mandate unbundling at a TELRIC price would "impair" the competitive supply of telecommunications services. "Increased sharing," observed Justice Breyer, "by itself, does not automatically mean increase competition."[106]

60. Second, competition will not be adversely affected if a given CLEC cannot procure the unbundled element from the ILEC. Since other firms are providing substitutes outside the ILEC's network, in the absence of diminishing returns to scale, increased demand for the element outside the ILEC's network can be met at the same or lower economic cost. Diminishing returns to scale would occur if a scarce input, which could not be reproduced, were present. Fertile land is an example of a scarce input that causes diminishing returns to scale. But in telecommunications those scarce inputs do not exist, and the Commission states that increasing returns to scale are expected.[107] The same cost occurs with constant returns to scale, while a lower cost arises with increasing returns to scale. Thus, the "limiting principle" demanded by the Court naturally emerges when one uses the effect on competition, rather than

106. *Iowa Utilities Board*, 119 S. Ct. at 754 (Breyer, J., concurring on "necessary" and "impair").
107. *Id.*

the effect on individual competitors as in the Commission's past and present formulations of the "necessary" and "impair" standards.

3. A Consumer-Welfare Standard Is Consistent with Established Case Law

61. The foregoing principles concerning the primacy of consumer welfare are completely consistent with established law. For example, Chief Judge Posner has written repeatedly for the Seventh Circuit since the early 1980s that "[c]ompetition is the allocation of resources in which economic welfare (consumer welfare, to oversimplify slightly) is maximized; it is not rivalry per se, or a particular form of rivalry, or some minimum number of competitors."[108] In a 1983 antitrust decision, he expressed this reasoning in a manner that is directly relevant to the Commission's approach, in its 1999 *Second Further Notice of Proposed Rulemaking*, to defining "impairment" under section 251(d)(2) of the Telecommunications Act:

> [T]hough there is a sense in which the exclusion of any competitor reduces competition, it is not the sense of competition that is relevant to antitrust law. The policy of competition is designed for the ultimate benefit of consumers rather than of individual competitors, and a consumer has no interest in the preservation of a fixed number of competitors greater than the number required to assure his being able to buy at the competitive price. Maybe the older, competitor-protection view would survive in a case of naked aggression resulting in the total exclusion of a competitor from the market, but that would be a per se case (if anything) and this is not.[109]

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108. Roland Machinery Co. *v.* Dresser Indus., Inc., 749 F.2d 380, 395 (7th Cir. 1984) (Posner, J.) (citing Product Liability Ins. Agency, Inc. *v.* Crum & Forster Ins. Cos., 682 F.2d 660, 663-65 (7th Cir. 1982) (Posner, J.)).

109. Marrese *v.* American Academy of Orthopedic Surgeons, 706 F.2d 1488, 1497 (7th Cir. 1983) (Posner, J.) (citing *Products Liability*, 682 F.2d at 663-64; University Life Ins. Co. of America *v.* Unimarc Ltd., 699 F.2d 846, 853 (7th Cir. 1983) (Posner, J.)). In *Products Liability*, Chief Judge Posner wrote in 1982: "The consumer does not care how many sellers of a particular good or service there are; he cares only that there be enough to assure him a competitive price and quality." 682 F.2d at 664. In another antitrust decision the following year, he wrote that "competition in the antitrust sense signifies not the preservation of all existing competitors but the maintenance of a sufficient number to assure that consumers get the best possible quality of product at the lowest possible price." *University Life*, 699 F.2d at 852 (citing *Products Liability*, 682 F.2d at 663-64).

Similarly, Justice (then Judge) Breyer wrote for the First Circuit in 1987:

> "[U]nreasonableness" in antitrust law has a rather special meaning. It means that the anticompetitive consequences of a particular action or arrangement outweigh its legitimate business purposes. "Anticompetitive" also has a special meaning: it refers not to actions that merely injure individual competitors, but rather to actions that harm the competitive process, a process that aims to bring consumers the benefits of lower prices, better products, and more efficient production methods.[110]

The Supreme Court has repeatedly embraced such reasoning. In 1993, for example, the Court stated in *Spectrum Sports, Inc.* v. *McQuillan*:

> The purpose of the [Sherman] Act is not to protect businesses from the working of the market; it is to protect the public from the failure of the market. The law directs itself not against conduct which is competitive, even severely so, but against conduct which unfairly tends to destroy competition itself. It does so not out of solicitude for private concerns but out of concern for the public interest.[111]

This principle in antitrust law flows from the Court's 1977 decision in *Brunswick Corp.* v. *Pueblo Bowl-O-Mat, Inc.*, which held that "antitrust injury . . . is . . . injury of the type the antitrust laws were intended to prevent and that flows from that which makes defendants' acts unlawful."[112]

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110. Interface Group, Inc. *v.* Massachusetts Port Auth., 816 F.2d 9, 10 (1st Cir. 1987) (citing 7 PHILLIP E. AREEDA, ANTITRUST LAW ¶ 1500, at 362-63 (Little Brown & Co. 1986); Brown Shoe Co. *v.* United States, 370 U.S. 294, 320 (1962)).

111. 506 U.S. 447, 548 (1993).

112. 429 U.S. 477, 488 (1977); *see also* Atlantic Richfield Co. *v.* USA Petroleum Co., 495 U.S. 328, 338 (1990); Cargill, Inc. *v.* Monfort of Colorado, Inc., 479 U.S. 104, 116–117 (1986); Associated Gen'l Contractors of Cal., Inc. *v.* Carpenters, 459 U.S. 519, 539–540 (1983); Blue Shield of Va. *v.* McCready, 457 U.S. 465, 483 & n.19 (1982); J. Truett Payne Co. *v.* Chrysler Motors Corp., 451 U.S. 557, 562 (1981). For an earlier articulation of that proposition, see Brown Shoe Co. *v.* United States, 370 U.S. 294, 320, (1962).

4. Contrary to the Goals of the Telecommunications Act, the Instructions of the Supreme Court, and the Lessons of Established Case Law, the FCC Has Embraced a Competitor-Welfare Standard

62. In its *Local Competition First Report and Order*, the Commission determined in 1996 that a "*requesting carrier's* ability to offer service is 'impaired' ('diminished in value') if 'the quality of the service *the entrant* can offer absent access to the requested element, declines' or if 'the cost of providing the service rises.'"[113] That impairment standard explicitly formulated a competitor-based standard, not a competition-based standard. Unfortunately, the Commission continues in 1999 to consider the economic interests of a given CLEC rather than the effect of the "necessary" and "impair" standards on overall competition.[114] Indeed, the FCC asks in its *Second Further Notice of Proposed Rulemaking* whether the "requesting carrier's particular market entry strategies should be considered as part of the 'necessary' and 'impair' analysis."[115] Moreover, the *Second Further Notice of Proposed Rulemaking* takes liberties in characterizing the relevant statutory language. The FCC states: "Section 251(d)(2)(B) requires us to consider whether the failure to provide access to an element would 'impair' the ability of a *new entrant* to provide a service it seeks to offer."[116] In fact, the statute speaks of a "telecommunications carrier,"[117] and it is inaccurate to characterize CLECs such as AT&T, MCI WorldCom, and Sprint as "new entrants" in local telecommunications markets. The Commission has yet to consider the crucial difference between the effect on competition, which the Telecom-

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113. *See SFNPRM*, *supra* note 1, at ¶ 6 (emphasis added) (quoting *Local Competition First Report and Order*, 11 F.C.C. Rcd. at 15,643 ¶ 285); *see also id.* at ¶ 17 (quoting same).
114. *Id.* at ¶ 20.
115. *Id.* at ¶ 27.
116. *Id.* at ¶ 17 (emphasis added).
117. 47 U.S.C. § 251(d)(2)(B).

munications Act of 1996 was intended to create, and the economic interests of a particular competitor, which neither the 1996 legislation attempted, nor the Commission subsequently should attempt, to protect.

63. The *Second Further Notice of Proposed Rulemaking* continues, incorrectly, to impart to the Telecommunications Act of 1996 "the older, competitor-protection view"—even when the FCC's statutory interpretation of section 251(d)(2) is judged by standards of antitrust jurisprudence dating at least to the early 1980s. To extend Chief Judge Posner's reasoning from 1983 to the present case of interpreting the "necessary" and "impair" standards of section 251(d)(2), the relevant analysis is whether "either the exclusion of an individual [CLEC] from a local market or the possible effect of that exclusion on the competitive behavior of other aspirants . . . could result in a higher price or lower quality of [service] in [the affected] communities."[118] The FCC's *Second Further Notice Proposed Rulemaking*, however, does not propose to undertake such analysis. Rather, it ascribes paramount importance to the supplications of individual competitors. Thus, to paraphrase another of Chief Judge Posner's antitrust opinions, "there is a question to what extent, with their emphasis on the welfare of competitors rather than consumers," those regulators at the FCC proposing a statutory interpretation of section 251(d)(2) "can survive the consumer-oriented view of antitrust that prevails today."[119] The fact that the business plan of any one CLEC might not be viable unless the FCC were to order the ILEC to unbundle its network elements at TELRIC prices "would have no appreciable effect on competition, viewed as a state in which consumer interests are well served rather than as a

118. *Marrese*, 706 F.2d at 1497.

process of rivalry that is diminished by the elimination of even one tiny rival."[120] As Judge Posner concluded thirteen years before passage of the Telecommunications Act: "That 'there's a special providence in the fall of a sparrow,' is not the contemporary philosophy of antitrust."[121]

5. There Is No Necessary Relationship between CLEC Profits and Consumer Welfare under an Imperfectly Competitive Outcome

66. The economic welfare of any single CLEC will not affect consumer welfare because the overall effect on the competitive supply of telecommunications services is what matters. If, under the Commission's interpretation of the "necessary" and "impair" standards, any single CLEC can claim that a given element is necessary to its business strategy, then it is likely that *all* elements of the network will be subjected to mandatory unbundling at TELRIC prices. Such a standard would harm consumers and diminish consumer welfare. As noted earlier, Justice Breyer discussed this outcome: "Regulatory rules that go too far, expanding the definition of what must be shared beyond that which is essential to that which merely proves advantageous to a single competitor, risk costs that in terms of the Act's objectives, may make the game not worth the candle."[122] But, if the Commission instead adopts the standard of whether competition will be impaired, then consumer welfare will be maximized in those instances in which regulators conclude that unbundling of a particular network element is appropriate to mandate at regulated TELRIC prices. Justice Souter failed to recognize the distinction between consumer's interest in competition and the economic interest of an individual competitor. His standard was whether an individual competitor might have slightly

119. *Id.* at 1495-96 (citing Reiter *v.* Sonotone Corp., 442 U.S. 330, 343 (1979)).
120. *University Life*, 699 F.2d at 853.

lower profits, rather than whether competition or consumers would be affected by that competitor's access to UNEs at TELRIC prices.[123]

67. As we will explain in greater detail in Part III, the Commission can determine whether competition will be impaired by analyzing the question of whether prices for telecommunication services will be higher or quality (innovation) will be lower as a result of the agency's "necessary" and "impair" policy. Thus, whether an individual competitor's profits would be affected if a given element were not unbundled at a government-mandated TELRIC price is not the correct question under a competition standard or public interest standard. The correct questions, rather, are whether competition will be impaired in the absence of unbundling on such terms and whether a given element is necessary for competition.

68. The Supreme Court realized in *Iowa Utilities Board* that, in a world of imperfect competition, cost differences that do not arise in marginal cost might have no effect on either competition or competitive prices. The Court stated:

> In a world of perfect competition, in which all carriers are providing their service at marginal cost, the Commission's total equation of increased cost (or decreased quality) with "necessity" and "impairment" might be reasonable; but it has not established the existence of such an ideal world.[124]

There can be no claim that telecommunications is a world of perfect competition given the significant fixed costs and common costs that exist.[125] Indeed, the Commission's standard for

121. *Id.* (quoting Hamlet, Act V, sc. ii, line 232).
122. *Iowa Utilities Board,* 119 S. Ct. at 754 (Breyer, J., concurring in part and dissenting in part).
123. *Id.* 739–40 (Souter, J., dissenting).
124. *Id.* at 735 (Scalia, J.).
125. *See, e.g.,* BAUMOL & SIDAK, *supra* note 11, at 7, 9, 34.

pricing unbundled elements, where TELRIC includes both fixed costs and foresees the inclusion of a "reasonable share" of forward-looking common costs, specifically rules out the possibility that the Commission believes that perfect competition could occur in the local telecommunications network.[126]

69. Furthermore, economists generally accept that with imperfect competition, prices are set as a markup over marginal costs, subject to a breakeven constraint so that the firm can cover its fixed and common costs.[127] Under free entry, a sufficient number of firms enters so that firms expect to earn their normal cost of capital (that is, they break even); but firms do not earn excess economic profits, because new entry decreases profits to normal levels. Prices exceed marginal costs, but only by enough to cover the fixed and common costs and to allow the firm to earn a normal economic return on invested capital. Thus, an imperfectly competitive outcome could lead to the same (or even lower) prices where CLECs do not have access to a given unbundled element from the ILEC but instead self-supply the element or buy it from another supplier. The expected profit of a CLEC might be higher if the Commission required the ILEC to supply the unbundled element, but competition could be greater without the requirement because the marginal cost to the CLEC and resulting prices to consumers could well be lower, especially in a situation of lumpy investment or excess capacity. Thus, under imperfect competition, the "necessary" and "impair" standards do not imply that competition is greatest or consumer welfare is highest when CLEC profits are the greatest, as the Commission has incorrectly assumed. Indeed, the normal result in economics

126. *Local Competition First Report and Order*, 11 F.C.C. Rcd. at 15,847 ¶ 682.

is that a CLEC's profits (which include fixed costs and common costs as factors) bear no necessary relationship to the amount of competition or consumer welfare under an imperfectly competitive outcome.

6. The Definition of "Impair" Cannot Become an Indemnification from Competitive Losses

70. In a competitive marketplace, firms are constantly engaged in a competitive struggle. Some firms will succeed while others fail. Unlike the regulated monopolies of the past, competitive telecommunications firms are not guaranteed an opportunity to earn a fair return. Instead, efficient economic markets demand that each player be forced to do its best to provide efficiently produced, competitively priced, high-quality service. The competitive process that the Telecommunications Act envisages does not imply that all competitors, new or existing, will succeed. The unbundling process should not be used to ensure the success of any individual competitor in any individual geographic market and certainly should not be used to guarantee the success of all competitors in the marketplace.[128]

71. The central principle underlying the implementation of the "necessary" and "impair" decision making process thus should not lie on the impact of unbundling any given network element on an individual competitor but rather on its impact on competition and market power. Whether or not an individual competitor is able to stave off competitive losses with or without unbundling is not an appropriate criterion or standard. If, on the other hand, one or more competitors are affected adversely, and that, in turn, leads to a significant

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127. *See* SIDAK & SPULBER, *supra* note 7, at 359.
128. *See generally* J. Gregory Sidak & Daniel F. Spulber, *Deregulation and Managed Competition in*

reduction in competition in the marketplace for end-user services, then unbundling may be appropriate under the Telecommunications Act.

72. Indeed, all firms in the telecommunications industry are not alike. They differ in many respects, including their starting places in the competitive battle, their abilities to raise capital, their efficiency in building facilities, and their managerial competence. It cannot be expected that all firms can or should succeed. Focusing on competition rather than individual competitors will obviate making individual firm assessments in determining the necessity of unbundling particular network elements.

73. Also, in concert with the geographic and temporal aspects discussed above, a competitor's losses in specific geographic areas are similarly irrelevant except to the extent that competition is materially affected in that area. That fact underscores the need to recognize the importance of the geographic dimension of competition and, hence, of mandatory unbundling. As in antitrust law, it is not the injury to competitors that matters. Instead, the injury to competition should serve as the necessary test before unbundling is required.

B. The Issue Is Not Whether the ILECs Will Unbundle Their Network Elements for Use by CLECs, but Whether the Government Will Compel the ILECs to Do So at TELRIC Prices

74. A decision by the Commission not to impose mandatory unbundling of a particular network element at TELRIC rates would not imply that that network element would be generally unavailable to competitive carriers. The pricing of access and the "necessary" and

Network Industries, 15 YALE J. ON REG. 117 (1998).

"impair" standards governing which elements to unbundle are inseparable, as one of us wrote in 1997: "[T]he pricing of network access is inextricably linked to the scope of mandatory unbundling. One cannot say whether or not a particular unbundling obligation is just and reasonable unless one knows how the regulator will permit the incumbent firm to price the mandatory network access associated with that obligation."[129] The Commission's *Second Further Notice of Proposed Rulemaking* confirms that assessment. Nothing prevents voluntary negotiations between incumbents and competitors on the terms of unbundling.[130] In fact, ILECs have a strong incentive to sell unbundled elements to competitors at market-determined prices. Increased usage by the CLEC's customers and innovative services developed by the CLEC itself represent a positive externality (or, "network effect") that will be enjoyed by the ILEC and all its customers on the network. Furthermore, the regional Bell operating companies (RBOCs) remain obligated to unbundle loops, local switching, and local transport at market prices to comply with the competitive checklist that is a prerequisite, under section 271 of the Telecommunications Act, for an RBOC's entry into in-region interLATA services.[131]

129. *See* SIDAK & SPULBER, *supra* note 7, at 565; *see also* Sidak & Spulber, *Givings, Takings, and the Fallacy of Forward-Looking Costs, supra* note 5, at 1163.

130. The recent consolidations in the CLEC industry (for example, the merger of MCI and WorldCom) would serve as a countervailing source of market power in any voluntary negotiation. For a review of the recent mergers in the CLEC industry, see Perrin Sterling, *The CLEC Market: Prospects, Problems, and Opportunities*, TELECOMMUNICATIONS INT'L, Nov. 1, 1998, at 41.

131. 47 U.S.C. § 271(c)(2)(B).

C. The Social Costs of Mandatory Unbundling May Outweigh the Gains

1. Mandatory Unbundling Imposes Social Costs by Distorting the Investment Incentives of Both ILECs and CLECs

75. Mandatory unbundling is nothing more than a form of compulsory sharing. In the telecommunications industry, mandatory unbundling can impose social costs by distorting the incentives of both incumbents and entrants. Disincentive effects on incumbents are substantial because those firms are continuing to make large, sunk investments in their existing networks. As noted in Part I, Justice Breyer explained in *Iowa Utilities Board* the importance of such incentives: "Nor can one guarantee that firms will undertake the investment necessary to produce complex technological innovations knowing that any competitive advantage deriving from those innovations will be dissipated by the sharing requirement."[132]

76. Regulatory use of cost-based rates (such as TELRIC) creates disincentives for new investment and for innovation in telecommunications.[133] If the new investment succeeds, the CLEC can purchase the ILEC's unbundled element at cost, as set by TELRIC. If the new investment fails, the CLEC does not bear any of the cost, but the ILEC's shareholders bear the cost of the unsuccessful investment. Thus, the regulators force the incumbent to provide CLECs a *free option* on its investment. Modern economic and finance theory demonstrates the value of options,[134] including call options, which are options to buy an asset.[135] By the

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132. *Iowa Utilities Board,* 119 S. Ct. at 721 (Breyer, J., concurring in part, dissenting in part) (concurring).

133. *See* SIDAK & SPULBER, *supra* note 7, at 403-26, 545-51. For a discussion of the important gains that have been realized by innovation in the Internet, see Jerry Hausman, *Telecommunications: Building the Infrastructure for Value Creation, in* SENSE AND RESPOND 63 (S. Bradley & R. Nolan eds., Harvard Business School Press 1998).

134. *See* AVINASH K. DIXIT & ROBERT S. PINDYCK, INVESTMENT UNDER UNCERTAINTY (Princeton University Press 1994); Fisher Black & Myron Scholes, *The Pricing of Options and Corporate Liabilities*, 81 J.

principle of "conservation of value" in finance, the Commission's grant of a free option to a CLEC diminishes the expected return of an ILEC's investment by the value of the option given to the CLEC. Thus, the grant of the option decreases the ILECs' incentives to invest.[136] Regulatory reliance on TELRIC pricing causes those free options to be given to competitors at the expense of the incumbent. Even if such an option is never exercised, it nonetheless represents for the CLEC a thing of considerable value, procured for the CLEC's advantage by the government through involuntary exchange. The result is a level of investment and innovation by the ILEC that falls below the economically efficient level. New services will then be provided at less than economically efficient levels, and consumers and businesses will be made worse off.[137] Thus, the "necessary" and "impair" standards should not be applied to new network service elements, or else diminished competition and decreased consumer welfare will result.

77. For example, consider R&D and investment in new services. Many new telecommunications services do not succeed.[138] For example, new information gateway services, which were unsuccessfully offered by ILECs, required substantial sunk costs of development because the cost of creating the large databases necessary to provide such service is substan-

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POL. ECON. 637 (1973).

135. *See,* e.g., WILLIAM F. SHARPE, INVESTMENTS 471 (Prentice-Hall, Inc. 3d ed. 1985).

136. For a discussion of conservation-of-value principles, see RICHARD A. BREALEY & STEWART C. MYERS, PRINCIPLES OF CORPORATE FINANCE 400-01 (McGraw-Hill 4th ed. 1991).

137. For a discussion and estimation of particular cases where regulation costs U.S. consumers and businesses billions of dollars because of regulatory delay of new services, see Hausman, *Valuing the Effect of Regulation on New Services in Telecommunications*, *supra* note 11.

138. *See, e.g.,* A Michael Noll, *Anatomy of a Failure: Picturephone Revisited,* 16 TELECOMMUNICATIONS POL'Y, 307 (1992); A Michael Noll, *Conspicuous (Lack of) Consumption,* TELE.COM, Feb. 8, 1999 (discussing Picturephone).

tial. Since the FCC's adoption of its *Local Competition First Report and Order* in 1996, if a new service is successful, under TELRIC price regulation, an ILEC competitor can buy the service at its total service long-run incremental cost (TSLRIC). For a successful new service, the ILEC recovers at most its cost. For unsuccessful services, the ILEC recovers nothing and loses its sunk investment.[139] Thus, the TELRIC regulation is analogous to a rule that would require pharmaceutical companies to sell their successful products to their generic competitors at incremental cost and would allow the pharmaceutical companies to recover their R&D and production costs on their successful new drugs, but to recover nothing on their unsuccessful attempts.

78. This truncation of returns, where a successful new telecommunications service recovers its cost (but no more) and unsuccessful new services recover nothing, decreases economic incentives for innovative new services from regulated telecommunications companies. Thus, the tighter is the cost standard, the lower are the incentives to innovate, as one would expect. More important, as the returns to the innovation become more uncertain, the expected return and the incentives to innovate also decrease. (At the same time, under standard option theory, the value of the option implicitly granted to the CLEC rises dramatically, for it is driven by the standard deviation of returns to the optioned network element, which rises with uncertainty.) If the cost-based rate of the unbundled elements corresponding to the new service were set exactly at the cost of providing the new service, with no return to R&D costs and no reward to uncertainty, then regulation would completely eliminate the economic

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139. *See* Jerry Hausman, *Regulation by TSLRIC: Economic Effects on Investment and Innovations,*

incentive to provide the new service, because the expected return to the ILEC would *always* be negative. Thus, regulation would lead to decreased introduction of new services, decreased investment, decreased innovation, and decreased consumer welfare.[140]

79. Consumers also suffer from the effect of unbundling on the incentives of entrants. If there is no existing alternative supply for a network element, but much potential supply, then unbundling will reduce the incentives for alternative suppliers to enter the fray. Conversely, forbearing from unbundling will increase the opportunities for entrants, promote facilities-based competition, and promote diversity for innovation, choice, and product diversification. In addition, unbundling could cause an already present CLEC to exit. In May 1997, the Canadian Radio-television and Telecommunications Commission (CRTC) adopted an unbundling policy that is responsive to such concerns, when (in contrast to the FCC's *Local Competition First Report and Order*) the agency ordered that Canadian ILECs "should generally not be required to make available facilities for which there are alternative sources of supply or

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MULTIMEDIA UND RECHT, Mar. 1999, at 22; *see also* SIDAK & SPULBER, *supra* note 7, at 375.

140. As noted in Part I, Justice Breyer warned of this perverse outcome:

> Nor can one guarantee that firms will undertake the investment necessary to produce complex technological innovations knowing that any competitive advantage deriving from those innovations will be dissipated by the sharing requirement. . . .
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> Nor are any added costs imposed by more extensive unbundling requirements necessarily offset by the added potential for competition. Increased sharing by itself does not automatically mean increased competition. It is in the *un*shared, not in the shared, portions of the enterprise that meaningful competition would likely emerge. Rules that force firms to share *every* resource or element of a business would create, not competition, but pervasive regulation, for the regulators, not the market place, would set the relevant terms.

Iowa Utilities Board, 119 S. Ct. at 753–54 (Breyer, J., concurring on "necessary" and "impair") (emphasis in original).

which [competitive local exchange carriers] can reasonably supply on their own."[141] Mandatory unbundling in Canada extends only to the ILEC's "essential" facilities.[142] As the CRTC well understood, compulsory unbundling requirements can deprive facilities-based entrants of opportunities to share costs, achieve efficient scale, and maximize utilization of zero marginal cost and/or sunk infrastructure.

2. The "Impair" Standard Cannot Be Satisfied Simply Because Implicit Subsidies Are Removed from Regulated UNE Prices

80. Regulated prices that are set on the basis of TELRIC confer implicit subsidies to those who purchase unbundled network elements.[143] That point has already been made, as well as its negative implications for efficiency, competition, and innovation. Those highly favorable prices encourage the use of and reliance on unbundled network elements of the incumbent and discourage the use of and investment in competitors' own facilities. The availability of those UNEs at inefficiently low prices not only attracts firms that could have deployed their own facilities, but also induces firms that could not have efficiently entered or expanded in the marketplace to do so. The subsidized prices shield inefficient entrants from facing the true economic prices they would otherwise be forced to face.

81. An issue arises if those subsidized prices are subsequently brought up to market-based, efficient levels. Clearly, as markets become increasingly competitive, any network elements that are required to become unbundled may not continue to face that requirement at some point in the future. When prices are allowed to rise to efficient levels, whether by market

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141. Local Competition, Telecom Decision CRTC 97-8, at ¶ 74 (Canadian Radio-television & Telecommunications Comm'n May 1, 1997).

forces or by regulation, those marginal firms may well incur financial difficulties, at least with respect to the purchase of certain UNEs. Any such difficulties should not be considered in determining whether the "impair" standard has been met. Surely, the Telecommunications Act does not intend any such result. If that measure of "impairment" were entertained, it would suggest that unbundling should be used indefinitely to support inefficient producers of telecommunications services. Such an outcome would be contrary to the interests of competition, consumer welfare, and the public interest.

82. The need to ignore the effects of the removal of subsidies from unbundled element prices further underscores the need to focus on competition and not on individual competitors. Assuming that all new competitors in the marketplace are not inefficient (a result that would imply the existence of a natural monopoly), there is no need to assess the effect at the individual firm level. Rather it will suffice to concentrate on competition in the market, appropriately defined.

3. The FCC Has Recognized the Negative Effect of Aggressive Unbundling

83. The FCC itself has explicitly recognized the disincentive effect of mandatory unbundling on investment in its 1998 *Advanced Services Notice of Proposed Rulemaking*.[144] In its 1999 *Second Further Notice of Proposed Rulemaking* on unbundling, the Commission discusses the ability of competition among carriers to develop and deploy new advanced

142. *Id.*
143. *See* SIDAK & SPUBLER, *supra* note 7, at 410-12.
144. *See* Deployment of Wireline Services Offering Advanced Telecommunications Capability, Memorandum Opinion and Order and Notice of Proposed Rulemaking, CC Dkt. Nos. 98-147, 98-11, 98-26, 98-32, 98-15, 98-78, 98-91, 13 F.C.C. Rcd. 24,011, 24,055-59 at ¶¶ 95-100 (1998) [hereinafter *Advanced Services NPRM*].

services.[145] In the same paragraph, the Commission states, without any apparent awareness of its self-contradiction, that it is critical that the "marketplace for these services be conducive to investment, innovation, and meeting the needs of consumers."[146] The Commission then states that the unbundled elements shall be offered at cost-based rates.[147] If the Commission makes the "necessary" and "impair" standards responsive to individual competitors and not to competition, it will create economic *disincentives* for investment, innovation, and meeting the needs of consumers. Consistent with this analysis, the social costs of unbundling owing to the disincentives for incumbents and entrants to invest should be incorporated into the overall welfare analysis that guides any mandatory unbundling standards that the FCC formulates for interpreting section 251(d)(2).

D. The "Necessary" and "Impair" Standards Should Not Rest on an Economic Misconception of Sunk Costs in Local Telecommunications

84. The concepts of "necessary" and "impair" cannot usefully be analyzed without recognizing the central role of prices and costs in telecommunications. As we shall explain in greater detail in Part III, within the essential facilities doctrine, costs have a primary role in that an essential facility "cannot be economically duplicated." Thus, as Justice Breyer noted, if the Commission establishes a pricing rule for unbundled elements that is uneconomically low, it can incorrectly make an unbundled element appear to be "necessary" or "essential" for competition, because a CLEC will not be able to self-provision the element at a cost near the Commission's established price of the unbundled element. Nor would the CLEC be able to

145. *SFNPRM*, *supra* note 1, at ¶ 3. This passage is the *only* reference to investment or innovation in the entire *Second Further Notice of Proposed Rulemaking*.

buy the use of the element from another provider at a price near the Commission-set price because of the uneconomically low price that the agency has set. Thus, the "necessary" and "impair" standards cannot be considered as a legal doctrine in isolation from the basic economics and technology underlying the network and the Commission's approach to establishing the price of unbundled elements.

85. The economic distinction between unbundled elements that require only a fixed–cost investment, as opposed to a sunk-cost investment, has an important role in both the "necessary" and "impair" standards and the essential facilities standards.[148] A fixed-cost investment may require a significant expenditure of capital, but it does not necessarily lead to an element meeting the "necessary" and "impair" standards. Capital markets work well in the United States, so CLECs can always raise the necessary capital for an investment in a fixed-cost element. The essential economic feature of a fixed-cost investment is that if the project does not succeed, the capital equipment can be used in alternative projects. For example, a switch, along with its associated software, is largely a fixed-cost investment. Although the cost of a switch is significant, if the CLEC fails to gain sufficient business to be successful, the CLEC can sell the switch and software. Thus, a switch and the associated software cannot lead to an element satisfying the "necessary" or "impair" requirement of section 251(d)(2) because a CLEC would not be at a significant economic disadvantage if it did not have access to the *ILEC's* switches.

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146. *Id.*
147. *Id.* at ¶ 4.
148. The FCC requests an analysis of the effect of sunk costs in defining the "necessary" and "impair"

86. Sunk-cost investments differ from fixed-cost investments because the capital cannot be recovered from a failed sunk-cost investment. Thus, most of the invested capital cannot be shifted to an alternative project.[149] Residential loops provide an example of a sunk-cost investment. Large sunk-cost investments can also provide one of the necessary conditions to establish the existence of an essential facility, because it may be uneconomic for the CLEC to attempt to duplicate large sunk-cost investments given the high degree of risk involved. The *Second Further Notice of Proposed Rulemaking* ignores the relevance to mandatory unbundling of an ILEC's sunk investment in a network element. Paradoxically, the FCC's sole concern over sunk costs is their effect on CLECs—whether sunk costs "would be incurred by requesting carriers if they were to obtain the network elements through self-provisioning or from other sources outside the incumbent LEC's network (*e.g.,* those costs associated with entry that are not fully recoverable if the requesting carrier exits the market)."[150]

E. The Commission's Own Policies May Exaggerate the Apparent Justification for Mandatory Unbundling

1. The Commission's Unbundling Policy Confers a Valuable Option on the CLEC

87. If the Commission requires an ILEC to unbundle, at a TELRIC price, a network element that has a significant sunk cost, the agency is compelling the ILEC to provide an option to the CLECs, as one of us has previously explained.[151] The CLEC can decide to invest

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standard. *SFNPRM*, *supra* note 1, at ¶ 26.

149. *See* SIDAK & SPULBER, *supra* note 7, at 78–82.

150. *SFNPRM, supra* note 1, at ¶ 26.

151. *See* Hausman, *Valuing the Effect of Regulation on New Services in Telecommunications*, *supra* note 11;

in its own facilities or to buy the use of the unbundled element from the ILEC. If the element arises from a sunk and irreversible investment, the option is valuable because the CLEC need not take the risk of investment but instead can cause the ILEC to take that risk. For the example of investment in a residential loop, significant risk exists currently that over the next twenty years (or the economic lifetime of a residential loop) that wireless competition or cable competition may cause the prices of services offered over residential loops to decrease significantly. Even more drastic, in twenty years copper-based residential loops may not even be in widespread use because wireless "loops" may prove to be significantly less costly or the broadband feature of cable television networks may cause demand to shift away from copper-based ILEC loops.[152] If a CLEC buying an unbundled sunk-cost element from an ILEC were required to sign a contract for the economic life of the investment (say, twenty years), then the CLEC would not receive a "free option" from the ILEC.

88. But the Commission's current pricing policy of using TELRIC for mandatory unbundling neither requires a CLEC to sign a contract for the economic life of the element nor provides the ILEC a markup to pay for the economic value of the option that regulators compel it to issue. Thus, CLECs can argue correctly that access to unbundled elements is necessary for all sunk-cost elements because competitive supply of those elements will not arise. The competitive supply will not arise because the Commission has set an uneconomically low price for the element that does not recognize the sunk-cost nature of the required

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Hausman, *Regulation by TSLRIC, supra* note 139.

152. Of course, digital subscriber line (DSL) technology may allow for broadband to be offered over ILEC loops. The point is that the technological evolution of competition is sufficiently uncertain to make investment in

investments. If ILECs are required to supply unbundled elements at prices below economic costs, they will be elements that (erroneously) satisfy the "necessary" and "impair" requirements of section 251(d)(2). Those UNEs will appear to satisfy the statutory test not for correct economic reasons, but because the Commission will have cut off any prospect of facilities-based competition through its pricing policies.

89. During the 1996 interconnection proceedings, in response to testimony on the effect of sunk and irreversible investments in setting economically efficient unbundled element prices, one IXC claimed that many of the ILEC's elements were *not* sunk investments. Thus, the investment would be fixed, but not sunk and irreversible.[153] As we discussed above, if an investment in an unbundled element is fixed but not sunk, the element cannot satisfy either the "necessary" or "impair" requirement. A CLEC can always raise the necessary investment funds in the capital markets and begin competing. If the CLEC is unsuccessful, the CLEC can always resell, without a significant economic loss, the capital equipment in which it invested. Thus, to the extent that at least one IXC previously has claimed (through its sponsored affidavits) that specific elements are not the result of sunk investment, those elements cannot satisfy the "necessary" and "impair" requirements. Only an element necessitating a sunk investment can do so.

sunk-cost elements very uncertain.

153. *See Local Competition First Report and Order*, *supra* note 8, 11 F.C.C. Rcd. at 15,826 n.1562 (discussing response of Jerry A. Hausman to filing of Glen Hubbard and William Lehr on behalf of AT&T Corp.).

2. The Commission's Regulated TELRIC Prices Artificially Reduce a UNE's Price Elasticity of Derived Demand

90. Regulators distort the apparent need for mandatory unbundling when they force an ILEC to lease a network element at TELRIC rather than at a price that incorporates the full option value conferred on the CLEC. Any UNE priced below its full option value will exhibit artificially higher demand than would obtain at a price that incorporated that option value. If the demand curve for the element is linear, then demand will be observed at the more price-inelastic portion of the demand curve. Thus, asking whether competitors would substitute away from consumption of the element if the ILEC attempted to impose a nontransitory price increase of nontrivial magnitude will automatically lead to a misdiagnosis of market power, for the elasticity calculation would be made with respect to a starting point that is, by regulatory distortion, too far down the demand curve.[154]

91. Antitrust lawyers and economists will recognize that analytical refinement to be the converse of the error in the *Cellophane* case, where the cross-price elasticity of demand was evaluated at the putatively higher monopoly price.[155] In *Cellophane*, that error falsely overstated the product's cross-price elasticity of demand *at the competitive price*.[156] In the case of the FCC's

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154. A technical caveat is necessary here. In the case of an isoelastic demand curve, such as one associated with a Cobb-Douglas utility function, the price elasticity of demand is constant at all points along the (nonlinear) demand curve. *Cf.* JAMES A HENDERSON & RICHARD E. QUANDT, MICROECONOMIC THEORY: A MATHEMATICAL APPROACH 111-13 (McGraw-Hill, Inc. 3d ed. 1980) (discussing constant elasticity of substitution of the Cobb-Douglas production funtion). Even in such a case of an isoelastic demand curve, however, it is still true that the FCC, by setting too low a price for the UNE, would suppress competitive supply of that element. As will become clear from our discussion in Part III.B.3, *infra*, that regulatory distortion would make it more difficult for the ILEC to meet the "critical share" calculation that would establish that the ILEC could not impair competition in the market for telecommunications services sold to end-users by declining to lease a particular network element to a CLEC at a TELRIC price.

155. United States *v.* E.I. du Pont de Nemours & Co., 351 U.S. 377, 404 (1956).

156. In the *Cellophane* case, the government claimed that du Pont was exercising unilateral monopoly power

mandatory unbundling of network elements at TELRIC prices, a "reverse *Cellophane*" problem arises: The FCC's failure to evaluate the price elasticity of demand for that element at a price that would cover the element's full option value would falsely understate the element's price elasticity of demand—and hence the true measure of its degree of "impairment" for purposes of section 251(d)(2)—*at a competitive price*. Simply put, an element that is unnecessary for the competitive supply of telecommunications services can be erroneously made to appear to satisfy the "impairment" standard for purposes of section 251(d)(2) as long as the ILEC is obliged to sell the unbundled element at an uncompensatory price and the FCC declines to correct for that market distortion.

92. A related implication of that insight is that the FCC can perpetuate the apparent need for its regulatory intervention by predicating its mandatory unbundling rules on determinations of "impairment" that assume that UNE prices are set at TELRIC levels. The regulator's stimulation of excess demand for UNEs thus preordains the result that the network element in question must be subject to mandatory unbundling. The FCC has used that regulatory strategy for years in another context—the regulation of broadcasting. The justification for regulatory intervention into the market structure and conduct of broadcasters was the putative "scarcity" of spectrum, which the FCC itself controlled through its licensing policies. The FCC artificially created excess demand for spectrum by underpricing it (at a zero price) and then justified its intervention as a way to alleviate the consequences of that excess demand. Judge Williams has

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over food wrappings. By allegedly increasing the price of Cellophane to monopoly levels, du Pont caused competitors to supply, and consumers to buy, other wrapping materials. The government claimed that such supply and demand substitution did not prove that Cellophane would exhibit significant cross-price elasticity at a described this putative spectrum "scarcity" as "an excess of demand over supply at a price of zero."[157] In the same manner, the pricing of UNEs according to the FCC's *Local Competition First Report and Order* would exaggerate the demand for, and hence the evident "necessity" of, the FCC's order of mandatory competitor access to those UNEs at regulated prices.

3. The FCC Endogenously Determines the Substitutability of Wireless Access for Wireline Loops Because of Its Control over Spectrum Allocation

93. Because the Commission controls the amount of spectrum that is allocated to commercial uses, the agency also controls the availability of alternative supply of telecommunications services. The amount of spectrum potentially available to wireless competitors could increase substantially beyond the current 180 MHz allocated to cellular, personal communications services (PCS), and enhanced specialized mobile radio (ESMR) spectrum. For example, the lower eighty blocks of ESMR spectrum remain to be auctioned.[158] Similar to its underpricing of UNEs, the Commission's spectrum policy may exaggerate the apparent justification for mandatory unbundling. This regulatory distortion is significant because, as we discuss in Part III, the availability of substitute offerings at the end-user level, such as wireless local loops, constrains the ability of the ILEC to exercise market power and hence protects consumer welfare.

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competitive price. *See* RICHARD A. POSNER, ANTITRUST LAW: AN ECONOMIC PERSPECTIVE 127–28 (University of Chicago Press 1976).

157. Time Warner Entertainment Co. v. FCC, 105 F.3d 723, 724 (D.C. Cir. 1997) (Williams, J., dissenting from the denial of rehearing *en banc*).

158. In phase I of the ESMR auctions, the Commission licensed the upper 200 blocks of ESMR spectrum. In phase II, the Commission will auction the lower 80 blocks. FEDERAL COMMUNICATIONS COMMISSION SPECIALIZED MOBILE RADIO (SMR): SMR UPPER 200 FACT SHEET (available at http://www.fcc.gov/wtb/auctions).